eRD6 Tracking Simulation in Fun4All

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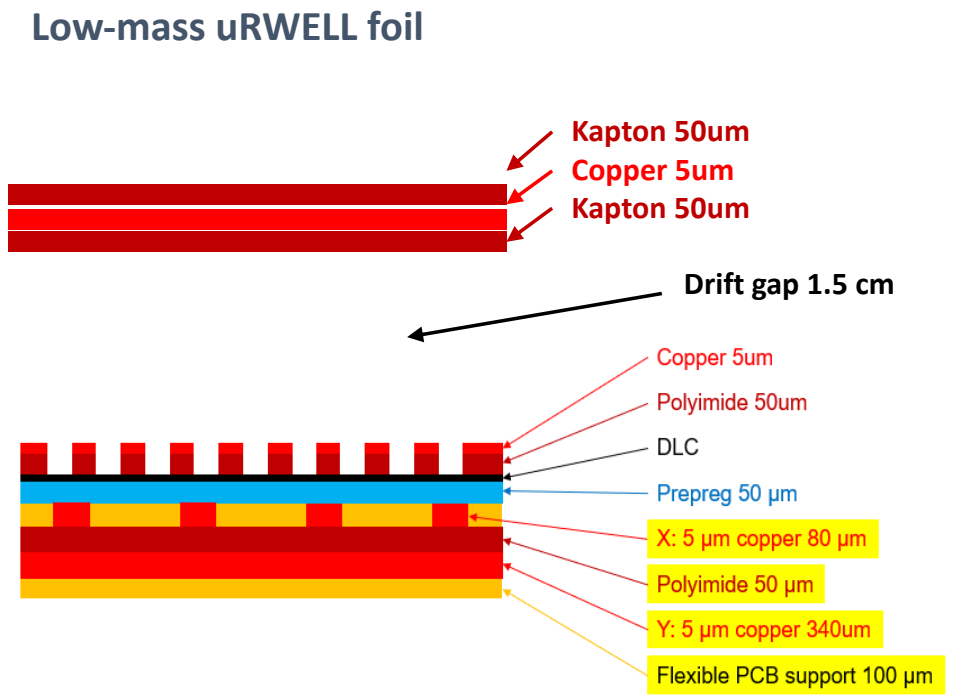
Cylindrical $\mu RWell$ Geometry

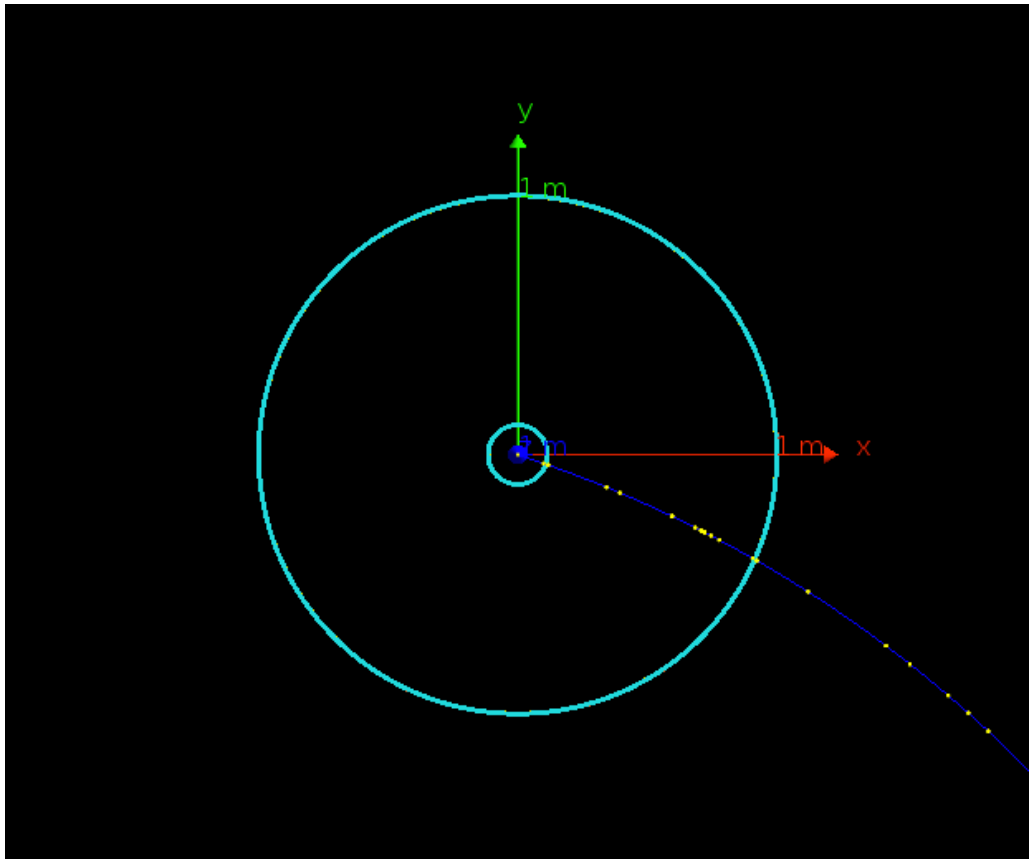
$\mu RWELL$ Geometry implementation in Fun4ALL

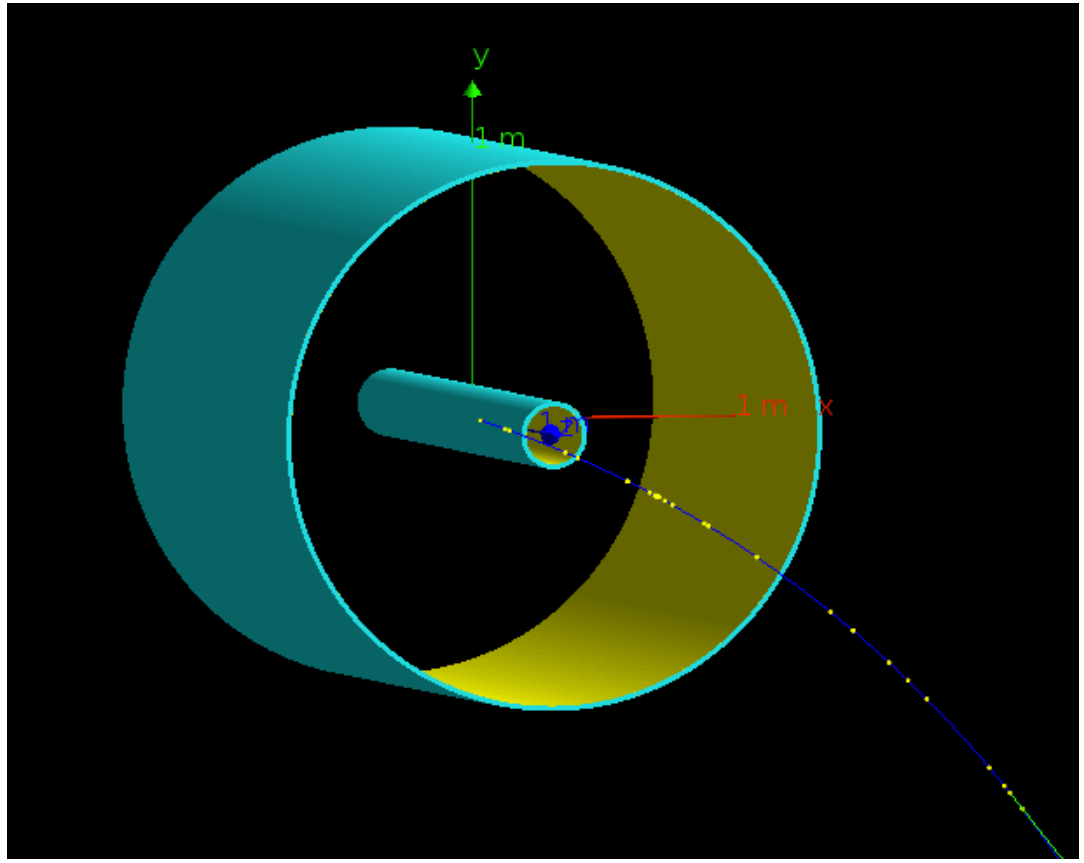
- Modified Fun4All Silicon cylinder tutorial macro to describe a $\mu RWELL$
- Material summary
  - Total Cu = $20\ \mu m$
  - Total Kapton = $150\ \mu m$
  - DLC layer – not included
  - Prepreg – modeled as NOMEX
  - PCB -- modeled as FR4
  - Drift gap – modeled as Ar (for now)
- Geometry
  - 2 cylinders (Before and after TPC location)
  - Inner radii = 8.5 cm and 80 cm
  - Total thickness = 1.53 cm
  - Length = 200 cm



Cylindrical $\mu RWell$ Geometry

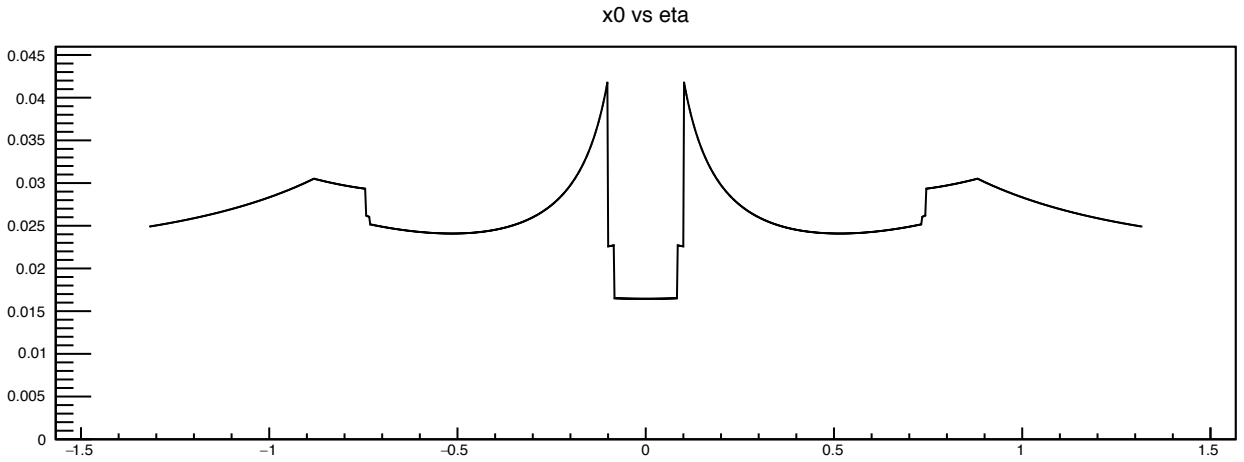
- $\mu RWELL$ Geometry implementation in Fun4ALL

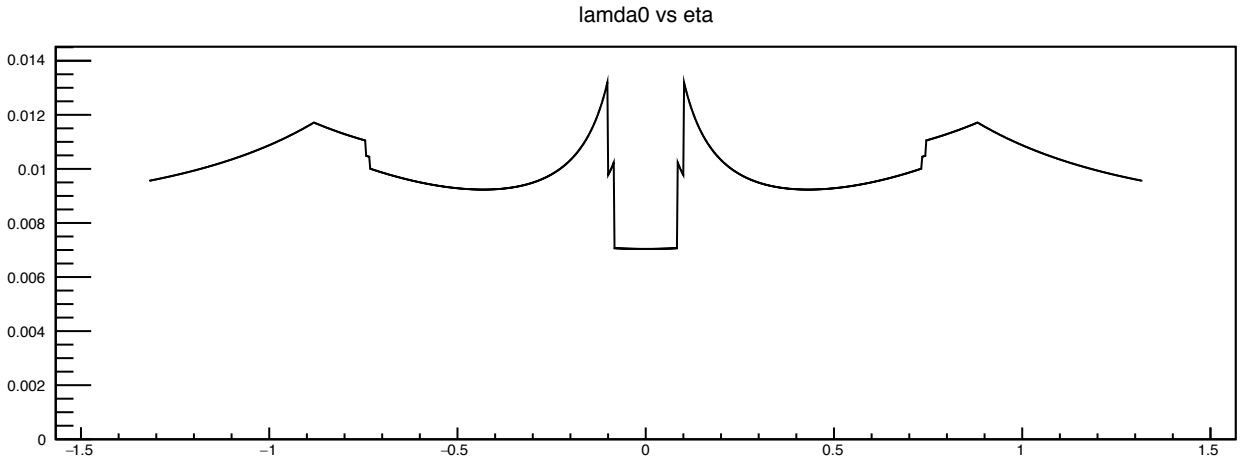




Cylindrical $\mu RWell$ Geometry Material Scan

- Material scan macro is available in Fun4All
  - 2 cylindrical $\mu RWell$ trackers
  - Do not completely understand the results seen.
  - …



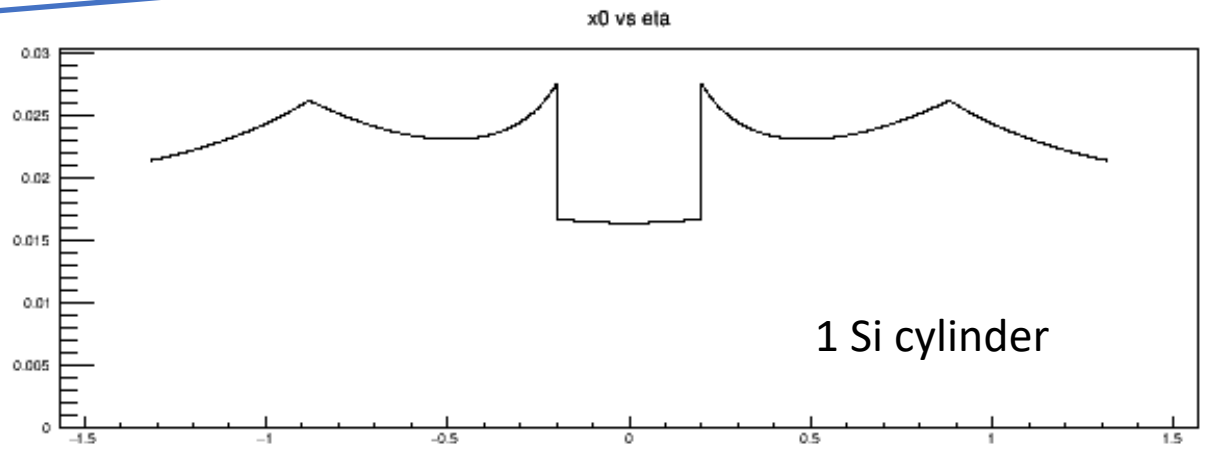


Cylindrical $\mu RWell$ Geometry Material Scan

- Material scan of basic Si Cylinder – 1 layer
  - Cylinder Geometry
    - Inner radius = 20 cm
    - Thickness = 0.02 cm
    - Length = 200 cm
    - $\chi_0^{Si} = 9.366\ cm$
    - Thickness / χ_0^{Si} = 0.2%
  - Material scan macro:

Theta(deg)	Phi(deg)	Length(mm)	x0	lambda0
0	0	5000	0.0185864	0.00747905

?



- Next Steps
  - Contact Fun4All concerning material scan macro
  - Begin implementing digitization/hits